BALTIMORE INNER HARBOR
Northwest branch of the Patapsco River,
south of Pratt Street between Light Street and Jones Falls
Baltimore City
Maryland

HAER No. MD-86

~~PHOTOGRAPHS~~

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Northeast Region
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

HAER MD, 4-BALT, 225-

HISTORIC AMERICAN ENGINEERING RECORD

Baltimore Inner Harbor — HAER No. MD-86

Location: Northwest Branch of the Patapsco River
South of Pratt Street between Light Street and Jones Falls
Baltimore, Maryland

UTM: A 18.361130.4349610
B 18.361070.4348960
C 18.362590.4348960
D 18.362240.4349110
E 18.362400.4349620
Quad: Baltimore East, Maryland

Dates of Construction: 1904-1910; 1970

Engineer: N. H. Hutton, Chief Engineer, Baltimore Harbor Board (Site plan; Piers 1, 2, and 3)
Oscar F. Lackey, Chief Engineer, Baltimore Harbor Board (Piers 4, 5, and 6)

Present Owner: City of Baltimore

Present Occupants and Uses: Pier: *U.S.S. Constitution* (Museum)
Gift shop and exhibits
Pier 3: Baltimore Aquarium (Aquarium)
Pier 4: Power Plant (Vacant)
Chart House Restaurant (Restaurant)
Marine Mammal Pavilion (Aquarium)
U.S.S. Taney (U.S. Coast Guard Cutter)
Pier 5: Connolly's Seafood Restaurant (Vacant; demolished October 1992)
Harrison's Pier 5 (Hotel and Restaurant)
Seven-Foot Knoll Lighthouse (Vacant; Commemorative)
Surface Parking
Pier 6: Surface Parking
Concert Pavilion (Performing Arts)
Office Structure (vacant; demolished October 1992)

Significance: The Inner Harbor, located at the heart of Baltimore, provided the foundation for the city's commercial economy in the late 18th and early 19th century. After the Great Fire of 1904, which destroyed all but one structure on the massive filled finger piers extending into the harbor, the City of Baltimore condemned the privately held land for municipal control of the harbor. The bulkheads on Piers 4, 5, and 6 are among the first reinforced concrete structures constructed in seawater in the United States. The solid piers, consisting of filled bulkheads, played a critical role in the evolution from

timber pile to reinforced concrete for seawater construction. In the late 20th century, the Inner Harbor was among the first major urban waterfront renewal projects, pioneering the concept of coupling festive retail with a waterfront aquarium anchor.

Project Information: Betty Bird, 2025 Eye Street, N.W., Suite 801, Washington, D.C. prepared documentation under contract to the Christopher Columbus Center Development, Inc. from October 1992 through March 1993. The Christopher Columbus Center for Marine Research and Exploration, an underwater archeology and marine research and education center, will construct a facility on Piers 5 and 6 that will require reinforcement of deteriorated concrete bulkheads on Piers 4, 5, and 6. Reinforcement will be constructed in front of existing material, obscuring the original concrete cylinders and sheet piles. This documentation was completed pursuant to 36 CFR 800 to mitigate the adverse effects of this undertaking.

DESCRIPTIVE INFORMATION

Baltimore's Inner Harbor is located in the upper harbor of the northwest branch of the Patapsco River, which empties into the Chesapeake Bay. Bounded by Light Street on the west, Pratt Street on the north, and the Jones Falls outlet on the east, the Inner Harbor forms the southern boundary of the center city. As presently configured, the Inner Harbor measures approximately 2400 ft. on the north by 1700 ft. on the west. The Inner Harbor is one of five components of the Baltimore Harbor, legislatively defined as the Patapsco River and its tributaries. These components are the northwest branch, the middle branch, the river itself, Curtis Bay, and tributaries other than Curtis Bay. The northwest branch is an irregularly shaped tidal basin less than a mile wide extending from Fort McHenry to Light Street. Jones Falls provides the only source of fresh water for the basin.[1]

The present appearance of the Inner Harbor reflects the transition from historic commercial waterfront use to late 20th century waterfront revitalization for recreational use. Of the original six finger piers extending south into the Inner Harbor from Pratt Street, only the four eastern piers remain. The six piers, which were approximately 150 ft. apart, were 150 ft. to 210 ft. wide and ranged in length from 530 ft. to 1542 ft. As originally designed in 1904, the piers occupied approximately one third of the Inner Harbor. None of the small Light Street piers are extant.

In 1970 the width of the Inner Harbor was decreased by 100 ft. on the west at the location of the former Light Street piers. The west shore was extended by rock and granite behind seawalls. A promenade supported by pylons juts out an additional 30 ft. from the shore infill.[2] The western half of the harbor has been completely redeveloped. The World Trade Center (1968-1977), a 28 story pentagonal glass and concrete office building is situated west of Pier 3 on a site slightly projecting into the harbor. In 1978 Harbor Place, a modern low-rise retail complex and food court, opened at the northwest corner of the harbor. The Baltimore Aquarium (ca. 1981) is situated at the foot of the former Pier 3.[3] A new pier extending south from Harbor Place serves as a berth for the *U.S.S. Constitution.*

The eastern half of the harbor, comprised of Piers 4, 5, and 6, has been partially redeveloped and retains elements of earlier use, although all three piers have been reconfigured. The Pratt Street Power Plant (HAER No. MD-101), a massive brick early 20th century building dominated by four exhaust stacks, occupies the head of Pier 4 at Pratt Street. The Marine Mammal Pavilion was constructed on the site of the U-shaped finger piers at the foot of Pier 4. The northern 2/3 of the slip between Piers 5 and 6 is infilled and paved for surface parking; redevelopment is concentrated at the southern ends of the piers. The foot of Pier 5 has been redeveloped with a low-rise hotel/restaurant complex and a historic Chesapeake Bay lighthouse. Connolly's Seafood Restaurant (HABS No. MD-1067) at the northeast corner of the pier at Pratt Street survives from the early 20th century. The foot of Pier 6 has been redeveloped with a concert pavilion. Pedestrian foot bridges with butterfly canopies connect

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[1]War Department U.S. Engineer Office, "Preliminary Examination of Baltimore Harbor and Channels, Md.," pp. 12-13.

[2]Robert C. Keith, *Baltimore Harbor: A Picture History*, p. 116.

[3]John Dorsey and James D. Dilts, *A Guide to Baltimore Architecture*, pp. 50-53 and pp. 69-70.

Piers 3, 4, 5, and 6. A vehicular bridge extends east from Pier 6 across the Jones Falls outlet to Eastern Avenue in Fells Point.

HISTORICAL NARRATIVE

The Inner Harbor, located at the heart of Baltimore, provided the foundation for the city's maritime economy in the late 18th and early 19th century. In 1730 the original 60 acre town of Baltimore was platted above the harbor, which was originally located at Water Street, approximately two blocks north of the present harbor. Baltimore developed slowly before the American Revolution but by 1800 it had become the largest city in Maryland and a major port for Chesapeake Bay and eastern seaboard trade.

While Baltimore's location at the head of the Chesapeake Bay spurred its early growth as a center of regional commerce, political and technological factors enabled it to emerge as a major port. Beginning in the mid-18th century, mills fueled by the falls around Baltimore transformed the port into a major point for flour export. The blockade of Annapolis during the American Revolution, coupled with the decline of Annapolis after the Revolution, further fueled Baltimore's growth, an expansion accelerated by the French Revolution and Napoleonic Wars. The schooner-rigged Baltimore Clippers, which could sail within five points of the wind, were among the fastest ships afloat, ideal for the hazardous wartime contraband trade. The relationship Baltimore established as a transfer point between Europe and Latin America and the West Indies during this period continued throughout the early 19th century. Local trade gained renewed emphasis when Baltimore was blockaded during the War of 1812.

The limitations of Baltimore Harbor became apparent after steamboats were introduced in 1813. The shallow depth of the Inner Harbor restricted the type of commerce it could accommodate. While its depth was adequate for small sailing ships, as steam vessels required deeper draft the Inner Harbor became inadequate for long distance commerce. Ships were forced to lighten their load 14 miles south of Baltimore to enter the harbor.

By the 1820s, the railroad had enabled New York to make inroads into Baltimore's shipping base. In 1828 Charles Carroll of Carrollton laid the cornerstone for the Baltimore and Ohio Railroad (B&O) and the Union Railroad was established at Canton shortly thereafter.[4] By the latter half of the 19th century the railroads built their own ocean terminals at old Locust Point (B&O Railroad) and Canton (Pennsylvania Railroad). In 1858 the U.S. government dredged the 22 ft. deep Fort McHenry channel extending from Baltimore to below Fort Carroll and the Brewerton Channel to the Chesapeake Bay. Channels were again dredged and reconfigured in 1871, 1892, and 1903 to an eventual depth of 30 ft. In March 1905 Congress authorized additional dredging for a 35 ft. depth channel.[5]

Although the channel accommodated larger and larger vessels, the approximately 18 ft. draft at the Inner Harbor piers limited the size of vessels that could dock there. This shortcoming had little effect

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[4]See G.H. Pouder, "The Port of Baltimore through Two Hundred Years" and the National Register Nomination for the Business and Government Historic District for general information about the development of Baltimore Harbor.

[5]"New Harbour Works in Baltimore," *The Engineer* (January 29, 1909), pp. 105-106.

on the sballow-draft paddle wheel steamers that dominated Chesapeake Bay commerce, but it forced deeper-draft ocean vessels to dock at Fells Point and other locations away from the center city where the water was deeper.[6] Accordingly, the Inner Harbor was set aside for coastal and Chesapeake Bay trade. Larger vessels could dock at Fells Point or in the lower harbor at Sparrows Point, Locust Point, or Canton.

The Inner Harbor underwent three stages of physical development. By 1800 individual landowners filled the marsh south of Water Street. They also extended the fill into the harbor to develop massive finger piers, effectively extending parcels they owned into the water. A study of Piers 5 and 6 indicates that the reclaimed land and piers were soon subdivided and sold. The piers were platted with roads and thickly settled with a heterogeneous combination of dwellings, commercial enterprises, and industrial uses.[7]

The Burnt District Commission described the condition of the Inner Harbor piers prior to the 1904 fire:

> The wharves were in even worse condition, many of the docks being nothing more than mudholes, and so narrow that no modern vessel of even moderate size could get beyond the ends. City after city on the Atlantic Seaboard were widening streets and building modern docks, while we were practically at a standstill.[8]

With the exception of the Pratt Street Power Plant on Pier 4, all structures on these thickly settled piers were destroyed in the Great Fire of 1904. The City of Baltimore then condemned the land and constructed a municipal harbor consisting of 6 finger piers extending south from Pratt Street.

The piers in the Inner Harbor were built on the site of earlier piers that the devastating fire of February 1904 had reduced to rubble. Along with the piers, the fire destroyed much of downtown Baltimore. The Burnt District Commission, formed to oversee the rebuilding of the city, had the power to condemn property for street-widening and to establish new building codes. Exercising this authority and working with a $6 million city bond issue, the Commission condemned property extending into the Inner Harbor shifting the former privately owned piers to municipal control. The Harbor Board, headed by Chief Engineer N.H. Hutton, planned the municipal improvements and rebuilt the piers under the authority of Ordinance No. 149, November 10, 1904.[9] Because of the shallow draft at the inner harbor, the new docks and wharves were designated for Chesapeake Bay and coastal trade.[10]

Work on the harbor lagged behind the reconstruction of downtown first because of problems with the condemnation proceedings and then with delays in the timber pile construction for Piers 1, 2, and 3.

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[6]Robert Keith, *Baltimore Harbor: A Picture History*, p. 104.

[7]See Barbara K. Weeks, *An Archival Investigation of the Archaeological Resources Associated with Harrison's at Piers 5 & 6, Baltimore Maryland*, particularly pp. 13-19, for a full discussion of ownership and use of the piers.

[8]*Report of the Burnt District Commission*, September 11, 1906, p. 32.

[9]*Harbor Board Report for 1904*, p. 1.

[10]*Harbor Board Report for 1914*, p.31.

Property owners on the former piers contested valuations to stall condemnation because they feared that municipal leasing procedures would deprive them of access to the water that ownership had provided. Timber pile construction on Piers 1, 2, and 3 progressed slowly because the work could only take place at low tide and the contractor refused to put on extra crews.

In 1905 Oscar F. Lackey (1874-1928) joined the Harbor Board as the Principal Assistant to N.H. Hutton, the Chief Engineer and President of the Harbor Board. When Hutton died shortly thereafter, Lackey succeeded him as Chief Engineer, a position he held until he left the Harbor Board in 1915 to join Poole Engineering. Because of his international experience and particularly his work on the Panama Canal, Lackey possessed a vision of the harbor facilities Baltimore required to be competitive during the 20th century. Lackey advocated municipal ownership of all harbor facilities as early as 1908, pressing for a $50 million loan for harbor improvements.[11] For additional information about Lackey, please see Baltimore Inner Harbor, Pier 5 (HAER No. MD-86-A).

While construction of Piers 1, 2, and 3 had employed traditional methods and materials, Piers 4, 5, and 6 were of reinforced concrete construction. The use of reinforced concrete for seawater construction was highly controversial as late as 1915. Lackey is credited with being among the first in the United States to employ this method. His obituary stated that, "he was one of the first, if not the first, engineer to utilize reinforced concrete piles in pier construction."[12]

A map in the 1909 *Harbor Board Report* depicts the leases on the piers and the use of the harbor. Pier 1 was occupied by the Baltimore, Chesapeake, and & Atlantic Railway Co. on the west and the United Fruit Company on the East. The Atlantic Fruit Co., the Baltimore & Carolina Steamship Co., and Standard Oil Co. occupied the west side of Pier 2; Lanasa & Gaffe, the Arundel Sand & Gravel Co., and Martin Wagner occupied the east side. The map notes that the steamship company was "(temporary)." Both sides of Pier 3 were leased by the Merchants & Miners Transportation Company. The two finger piers at the end of Pier 4 are labeled "public pier" with the Harbor Master located at the head of the finger piers. The United Railway and Electric Company leased the entire upper portion of the pier.

By the time the piers were finished, the Harbor Commission had begun to make long-term, large-scale plans for improving the Port of Baltimore. As the *Port Development Plan* of 1922 noted, "Piers 5 and 6 are not well adapted for oversea terminals on account of the expense of preparing for 30 ft. depth of water and could be best used for industries or coastwise shipping which does not require over 20 ft. of water and which does require city delivery."[13] Piers 4, 5, and 6 were ideally suited for transferring food from Anne Arundel county and the Eastern Shore because of their proximity to Marsh Market, two blocks north. The Fallsway connected the piers with freight yards and passenger stations,[14] providing a connection between water and rail transportation.

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[11]*Harbor Board Report for 1908; Harbor Board Report for 1910*, p.33.
[12]Whitman, p. 1863.
[13]*Ibid.*, p. 17.
[14]Harbor Board of Baltimore, *Port of Baltimore: Modern Facilities and Terminal Advantages*, p. 21.

Chesapeake Bay steamboats and local commerce dominated the Inner Harbor until the beginning of World War II.[15] The commercial network that formed the piers began to vanish by the mid-1950s with the opening of the Chesapeake Bay Bridge connecting the Eastern Shore with the mainland near Annapolis. After the Bay Bridge opened, produce could be trucked in four hours in a trip that formerly took three days by boat.[16] Marsh Market was closed in 1960 when produce dealers moved to the new market on the Pulaski Highway.[17] The once bustling steamer traffic that conducted passengers to Philadelphia, Washington, Norfolk, and Annapolis vanished with the last run of the night boat, *City of Norfolk*, in 1962.[18] For additional information about the use of the eastern piers during the mid-20th century, please see Connolly's Seafood Restaurant (HABS No. MD-1067).

Because the city owned and controlled the land, in 1964 they were able to implement a visionary waterfront redevelopment scheme that converted the waterfront from industrial and commercial use to recreational use, resulting in the demolition of the Light Street piers and of Piers 1 and 2. Piers 4, 5, and 6 were also reconfigured as part of this redevelopment. The new recreational uses include Harbor Place, a development that pioneered the concept of "festive retail," the Baltimore Aquarium and Marine Mammal Pavilion, Harrison's Pier 5 (hotel and restaurant), and a Music Pavilion. The redevelopment of the Inner Harbor also included the World Trade Center, a 28 story commercial building, and a failed entertainment center in the Pratt Street Power Plant on Pier 4.

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[15]Keith, p. 104.

[16]"One small craft remains of oyster vending fleet," March 29, 1957 newspaper clipping in Connolly family collection.

[17]Merritt, *op. cit.*

[18]"Curtis Bay Memories: Night Boat," clipping in Connolly family collection.

SOURCES OF INFORMATION

A. Engineering drawings:

Working drawings: Private Collection of Peter Van de Castle. (These drawings will be donated to the Baltimore Museum of Industry.)

Plans, site plans, schematic drawings, and structural diagrams: *Reports of the Harbor Board*, 1904-1914 (Enoch Pratt Free Library)

B. Historic views:

Because the Inner Harbor was central to Baltimore's early development and because of its location adjacent to the center city, it is well represented in historic prints and photographs. The most extensive collections of views can be found in the Maryland Historical Society and the Peale Museum. These images have been reproduced in a number of published sources, the most important of which are listed below. All of these sources may be found in the Maryland Room of the Enoch Pratt Free Library and, with the exception of the Peale Museum catalogue, in the Library of Congress. *The Reports of the Harbor Board* for this period also contain numerous photos of the piers and the piers under construction. Please see Baltimore Inner Harbor, Pier 5 (HAER No. MD-86-A) for additional detail on *The Reports of the Harbor Board.*

Beirne, Francis F. *Baltimore: A Picture History 1858-1968.* Baltimore: Bodine & Associates, 1968.

Image based on 1752 John Moale drawing showing Baltimore and harbor (p. 2)
1796 map showing piers extending into Inner Harbor (p. 3)
Views of harbor ca. 1840, 1857, and ca. 1950 (pp. 16, 27, and 120)
Bay steamers at Light Street, n.d. (p. 88)

Greene, Suzanne Ellery. *Baltimore: An Illustrated History.* Woodland Hills, California: Windsor Publishing, 1980.

Warner & Hanna 1801 Map showing piers extending into harbor (p. 47)

Keith, Robert C. *Baltimore Harbor: A Picture History.* Baltimore: Ocean World Publishing, Inc., 1982.

Photo of Inner Harbor before 1904 fire (p.1)
Engravings & plans of the Inner Harbor ca. 1752, 1792, and ca. 1869 (pp. 101-103)
Photo of NW corner of Inner Harbor ca. 1872 (p. 104)
Aerial photos, 1948, ca. 1950, and 1967 (pp. 113-114)

Kelly, Jacques. *Bygone Baltimore*. Norfolk: Donning Co. Publishers, 1982.

Photo of NW corner of Inner Harbor ca. 1910 (p. 87)
Photos of Pier 3 in 1908 (pp. 82-83)

The Peale Museum. *Harbor 1854-1955: A Century of Photographs of the Port of Baltimore*. Baltimore: Peale Museum, ca. 1955. (MD.XHE554.B2A34)

The Peale Museum has a collection of daguerreotypes by H.H. Clark with views of the harbor from Federal Hill taken at various dates in the late 19th century. (See p. 8)

Warren, Marion and Mame Warren. *Baltimore, When She Was What She Used to Be, 1850-1930*. Baltimore and London: Johns Hopkins University Press, 1983.

Views from Federal Hill (p. 14)
Views of harbor from north and Federal Hill after 1904 fire (pp. 126-127 and 240)
Steamers along wharves, 1900-1903, and Light Street wharves in ca. 1926 and 1906 (pp. 106 and facing, pp. 138-139)

C. Bibliography:

A full bibliography pertaining to the construction of reinforced concrete piers in seawater and references to reports treating the present condition of Piers 4, 5, and 6 may be found in Baltimore Inner Harbor, Pier 5 (HAER No. MD-86-A)

Burnt District Commission Reports. (Enoch Pratt)

City Engineer Reports. (Enoch Pratt)

Connolly family collection (See Connolly's Seafood Restaurant, HABS No. MD-1067).

Connolly's Seafood Restaurant (HABS No. MD-1067).

Crane, William B. "A Landsman Sees the Water Front -Ill," in the *Baltimore Sun*, Feb. 18, 1940, n.p.

"Curtis Bay Memories: Night Boat" page from book in Connolly family collection.

Dorsey, John and James Dilts. *A Guide to Baltimore Architecture*. Centreville, Maryland: Tidewater Publishers, 1981.

Export and Import Bureau, Baltimore Chamber of Commerce. "The Port of Baltimore: A Description of the Major Harbor Areas, Waterfront Industries, and Principal Port Facilities," July 1947. (Harbor Vertical File, Enoch Pratt)

Export and Import Bureau, Baltimore Chamber of Commerce. "Port of Baltimore: A Guide to the Principal Piers and Other Port Facilities in Baltimore Harbor," July 1947. (Harbor Vertical File, Enoch Pratt)

Export and Import Bureau, Baltimore Association of Commerce. "Port of Baltimore: Essential Data on its Facilities and Advantages," April 1945 (Harbor Vertical File, Enoch Pratt).

Harbor Board of Baltimore. *Port of Baltimore: Modern Facilities and Terminal Advantages*. Baltimore: Hoen Brothers, 1918. (Enoch Pratt)

Harbor Board of Baltimore. *Reports of the Harbor Board*, 1904 - 1914. (Enoch Pratt)

Harbor Board of Baltimore. *Survey of the Port of Baltimore*, Volume 1, 1920. (Enoch Pratt)

Keith, Robert C. *Baltimore Harbor: A Picture History*. Baltimore: Ocean World Publishing, Inc., 1982.

Merritt, James M. "Remembering Baltimore: Tom Connolly's melon-laden skipjack" in *Evening Sun*, September 17, 1991.

National Register Nomination for the Business and Government Historic District, Baltimore, Maryland. (Maryland Historical Trust)

National Register Nomination for the Pratt Street Station, Pier Four Power Plant. (Maryland Historical Trust)

"New Harbour Works at Baltimore," in *The Engineer* (Jan. 29, 1909), pp. 104-106. (Library of Congress)

Obituary for Oscar F. Lackey, *Baltimore Sun*, December 20, 1928. (Maryland Room Biographical File)

"One Small Craft Remains of Oyster Vending Fleet," March 29, 1957, clipping from Connolly family collection.

Port Development Commission. *Port Development Plan of Baltimore, Maryland*. Baltimore: A. Hoen, March 1922. (Enoch Pratt)

Pouder, G.H. (Director, Export and Import Bureau, Baltimore Association of Commerce). "The Port of Baltimore Through Two Hundred Years," Prepared 1929, rev. 1947. (Harbor Vertical File, Enoch Pratt)

Sanborn Fire Insurance Maps.

Sarratt, Reed. "Port Questions in Debate," in the *Baltimore Evening Sun*, June 29, 1950.

Simmons, Scott E. *An Investigation of the Archaeological Resources Associated with Piers 5 and 6 and the Harrison's at Pier 5 Complex (18BC62 and 18BC63) Baltimore, Maryland.* Baltimore: Baltimore Center for Urban Archaeology, 1990.

Vertical Files on Baltimore Harbor. (Maryland Room, Enoch Pratt Free Library)

War Department U.S. Engineer Office, "Preliminary Examination of Baltimore Harbor and Channels, Md.," in Baltimore Harbor Vertical File.

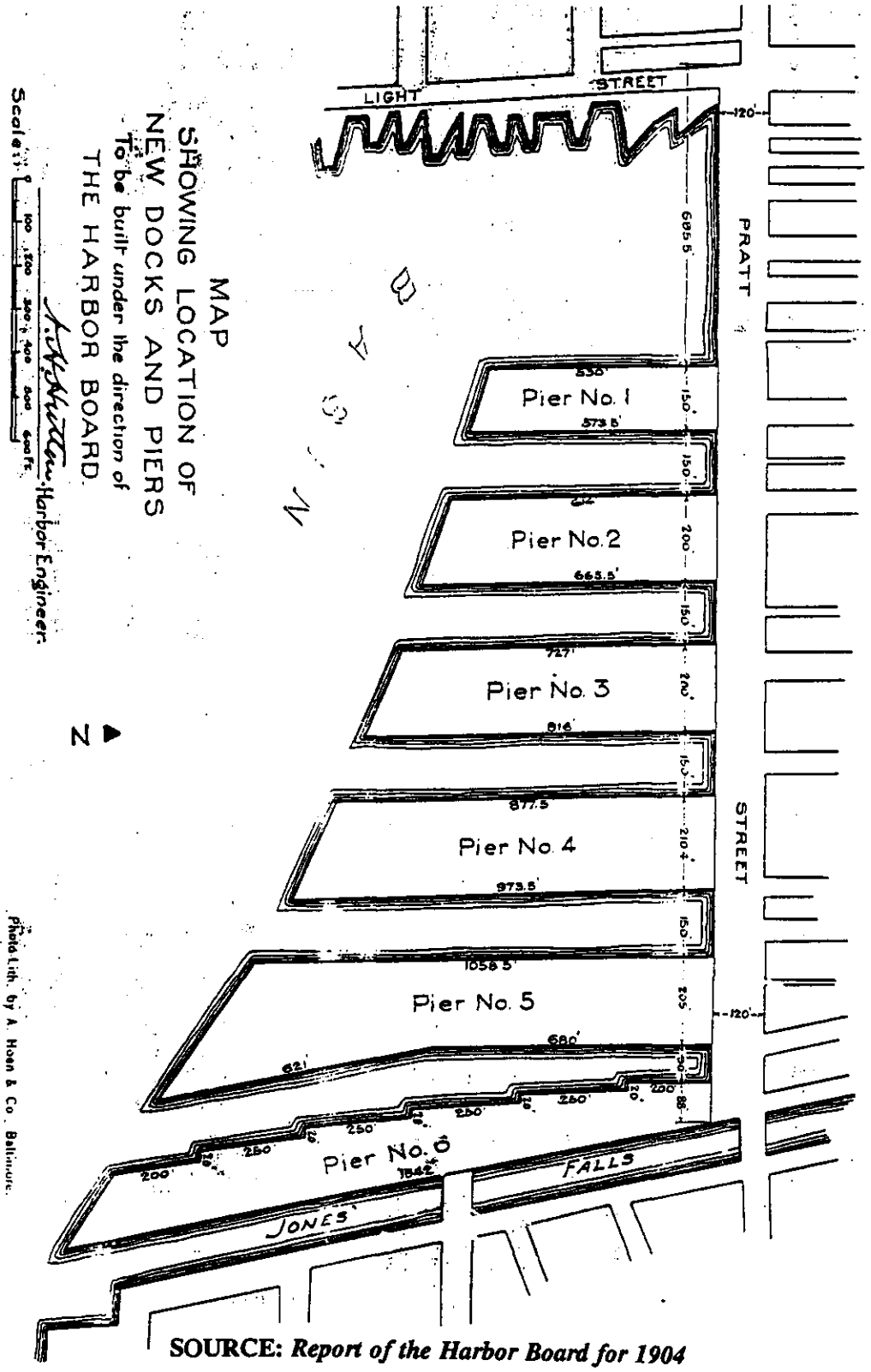
Weeks, Barbara K. *An Archival Investigation of the Archaeological Resources Associated With Harrison's at Piers 5 and 6, Baltimore, Maryland.* Baltimore: Baltimore Center for Urban Archaeology, 1987.

Whitman, Ezra B. "Memoir of Oscar Francis Lackey, M. Am. Soc. C. E.," in *Transactions of the American Society of Civil Engineers*, Vol. 93, pp. 1863-64.

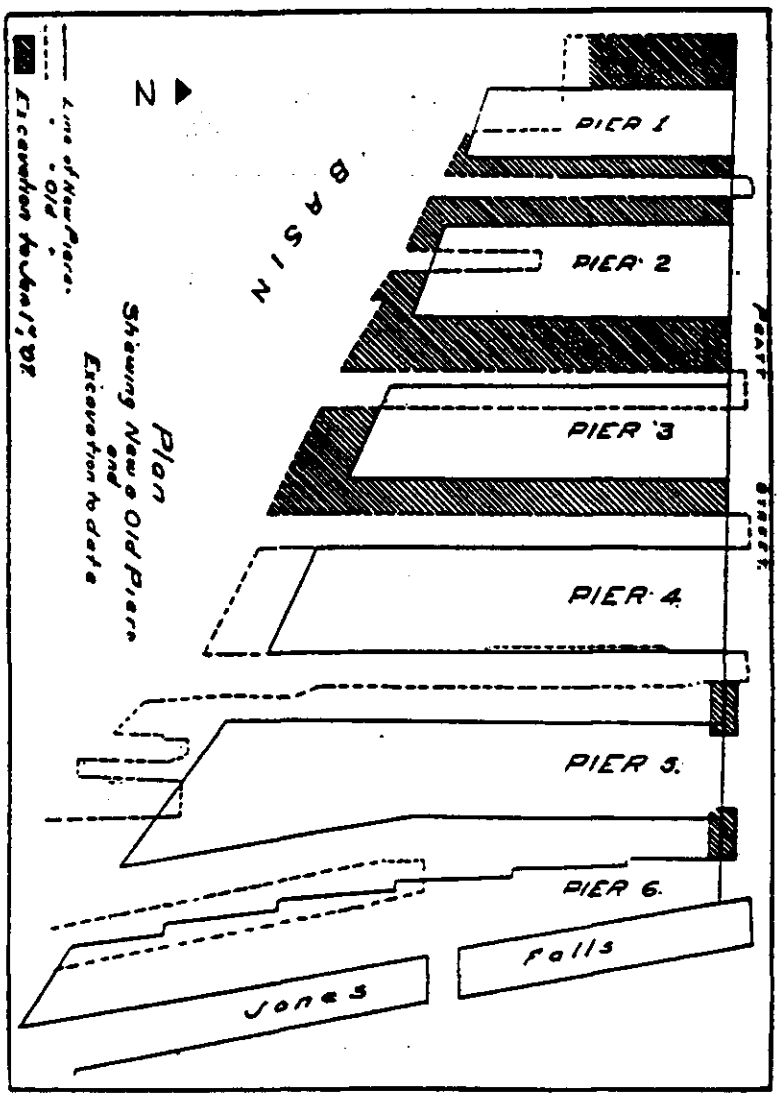
D. Likely sources not yet investigated:

This investigation was focused on the reinforced concrete technology for the bulkheads on Piers 4, 5, and 6. Little attention was devoted to the history of the use of Piers 1 - 3 or to a detailed evolution of the harbor. This material can be found in *Reports of the Harbor Board*, Enoch Pratt vertical files, and numerous published histories of the harbor.

Source: Baltimore East Quadrangle

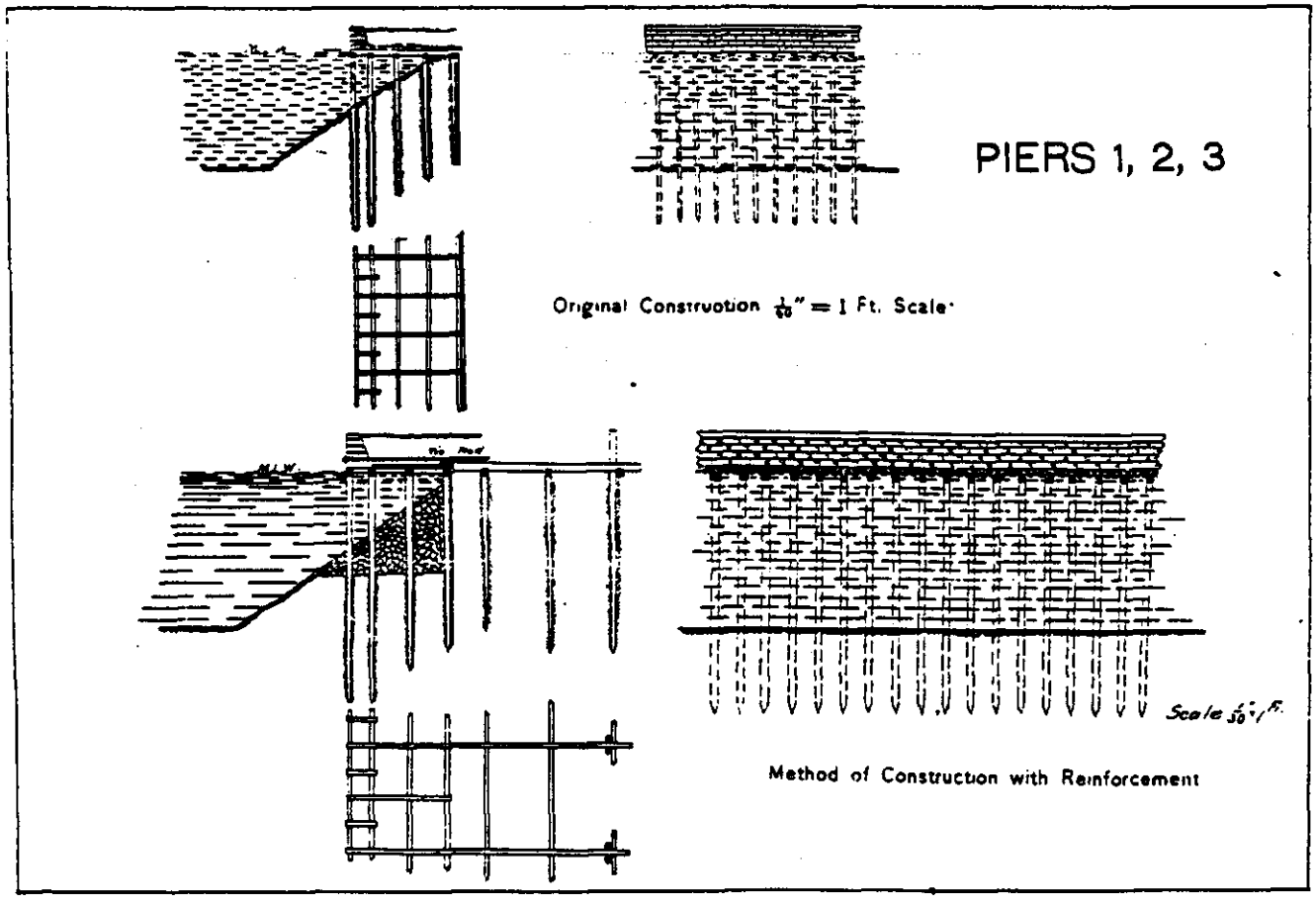


SOURCE: ***Report of the Harbor Board for 1904***



SOURCE: *Report of the Harbor Board for 1906*, p. 27

PLATE IV



Source: Harbor Board Report for 1907, p. 13